



## 9.6 Township of Chatham

This section presents the jurisdictional annex for the Township of Chatham.

### 9.6.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan's primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Thomas Miller Policed Lieutenant, OEM - Deputy Coordinator 973-377-0100 tmiller@ctpd.net	Kevin Sullivan OEM Coordinator 973-635-4600 ksullivan@chathamtownship-nj.gov

### 9.6.2 Municipal Profile

The Township of Chatham is a suburban municipality located in southeastern Morris County. The western portions of the Township are located within the Great Swamp Wildlife Refuge and southern boundary of the Township borders the Passaic River and third Watchung Mountain Ridge. The west side of the Township located in the Great Swamp is largely undeveloped. Most of the Township's development exist on the eastern side of the municipality closer to County Route 646 and 638 and is mostly residential in nature. Adjacent municipalities include the Borough of New Providence to the south, The City of Summit to the southeast, and the Borough of Chatham to the east, the Borough of Madison to the northeast, and Harding and Long Hill Townships to the west. According to the U.S. Census, the 2010 population for the Township of Chatham was 10,452. The Township has a total area of 9.36 square miles, of which 8.98 square miles is land and 0.38 square miles is water.

### Growth/Development Trends

Township of Chatham did not note any major residential or commercial development, or major infrastructure development planned for the next 5 years in the municipality.

### 9.6.3 Natural Hazard Event History Specific to the Municipality

Morris County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2008 to present were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.6-1. Hazard Event History**

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
March 12 – April 15, 2010	Severe Storm and Flooding	DR-1897	YES	7,557.00
December 26-27, 2010	Severe Winter Storm	1954	YES	38,538.00
October 29, 2011	Severe Storm	4048	YES	271,040.00



Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
	and Flooding			
August 26-September 5, 2011	Hurricane Irene	4021	YES	43,679.00
October 26-November 8, 2012	Hurricane Sandy	4086	YES	443,708.00

### 9.6.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. The following summarizes the hazard vulnerabilities and their ranking in the Township of Chatham. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential hazards for the Township of Chatham.

**Table 9.6-2. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, c</sup>	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking <sup>b</sup>
Drought	Damage estimate not available	Frequent	27	Medium
Dam Failure	Damage estimate not available	Rare	6	Low
Earthquake	500-year MRP: \$8,877,506 2,500-year MRP: \$119,431,828	Occasional	32	High
Extreme Temperature	Damage estimate not available	Frequent	27	Medium
Flood	1% Annual Chance: \$289,120	Frequent	18	Medium
Geological Hazards	Exposed to Class A and Class B: \$79,875,922	Occasional	12	Low
Severe Storm	100-Year MRP: \$3,587,065 500-year MRP: \$17,681,938 Annualized: \$211,350	Frequent	48	High
Winter Storm	1% GBS: \$32,348,728 5% GBS: \$161,743,642	Frequent	54	High
Wildfire	Estimated Value Exposed to Extreme, Very High and High: \$10,128,893	Rare	6	Low
Disease Outbreak	Damage estimate not available	Frequent	36	High
Hazardous Materials	Damage estimate not available	Frequent	36	High
Infestation	Damage estimate not available	Frequent	18	Medium

Notes:

- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
  - b. The valuation of general building stock and loss estimates was based on custom inventory for the municipality.
- High = Total hazard priority risk ranking score of 31 and above  
Medium = Total hazard priority risk ranking of 20-30+



- Low = Total hazard risk ranking below 20
- c. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- d. Loss estimates for the flood and earthquake hazards represent both structure and contents.
- e. The HAZUS-MH earthquake model results are reported by Census Tract.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Township of Chatham.

**Table 9.6-3. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Chatham Township	51	13	\$104,523.09	1	0	1

Source: FEMA Region 2, 2014

(1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, and are current as of 9/30/2014. Please note the total number of repetitive loss properties includes the severe repetitive loss properties. The number of claims represents claims closed by 9/30/14.

(2) Total building and content losses from the claims file provided by FEMA Region 2.

(3) The policies inside and outside of the flood zones is based on the latitude and longitude provided by FEMA Region 2 in the policy file.

Notes: FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility.

A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case.

Number of policies and claims and claims total exclude properties located outside County boundary, based on provided latitude and longitude.

### Critical Facilities

The table below presents HAZUS-MH estimates of the damage and loss of use to critical facilities in the community as a result of a 1- and 0.2-percent annual chance flood events.

**Table 9.6-4. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100- Percent <sup>(1)</sup>
No critical facilities are located within the FEMA 1% and 0.2% Flood Hazard Area						

Source: HAZUS-MH 2.1

Note (1): HAZUS-MH 2.1 provides a general indication of the maximum restoration time for 100% operations. Clearly, a great deal of effort is needed to quickly restore essential facilities to full functionality; therefore this will be an indication of the maximum downtime (HAZUS-MH 2.1 User Manual).

Note (2): In some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type. Further, HAZUS-MH may estimate potential damage to a facility that is outside the DFIRM because the model generated a depth grid beyond the DFIRM boundaries.

NA Not available

X Facility located within the DFIRM boundary

- Not calculated by HAZUS-MH 2.1

### Other Vulnerabilities Identified

According to the 2010 preliminary FEMA Flood Insurance Study (FIS) for Morris County, flooding occurs in the Green Village/Britten Road area from Loantaka Brook in the Township of Chatham. The height of floodwater diminishes below Green Village Road as water spreads out into a section of the Great Swamp



between Britten and Meyersville Roads. The Black Brook floods regularly in the vicinity of several houses as it crosses Green Village Road. The Great Swamp and the Millington Gorge affect the flow of the Passaic River. The Great Swamp acts as a storage area, while the Millington Gorge restricts the passage of flood levels (FEMA FIS 2010).

### 9.6.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification
- National Flood Insurance Program
- Integration of Mitigation Planning into Existing and Future Planning Mechanisms

#### Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Township of Chatham.

**Table 9.6-5. Planning and Regulatory Tools**

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No)	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes	Local	Planning Board	
Capital Improvements Plan	Yes	Local	Township Committee	
Floodplain Management / Basin Plan	No			
Stormwater Management Plan	Yes, 2005	Local	Planning Board	
Open Space Plan	Yes, 2010	Local	Township Committee	
Stream Corridor Management Plan	No			
Watershed Management or Protection Plan	No	Local		
Economic Development Plan	No	Local		
Comprehensive Emergency Management Plan	Yes, 2/2014	Local	OEM	
Emergency Response Plan	Yes 2/2014	Local	OEM	
Post-Disaster Recovery Plan	Yes, 2/2014	Local	OEM	
Transportation Plan	Yes, 2/2014	Local	OEM	
Strategic Recovery Planning Report	Yes, 2/2014	Local	OEM	
Other Plans:				



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No)	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local		State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)  Chatham Township General Ordinance, Chapter XI, Building and Housing
Zoning Ordinance	Yes	State & Local		Chatham Township Land Development Chapter XXX, Article 5, 30 -40
Subdivision Ordinance	Yes	State & Local		Article 6, 30 – 60 Filing Procedures
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local		
NFIP: Cumulative Substantial Damages	No			
NFIP: Freeboard	Yes	State, Local		
Growth Management Ordinances	No			
Site Plan Review Requirements	No			
Stormwater Management Ordinance	No			
Municipal Separate Storm Sewer System (MS4)	No			
Natural Hazard Ordinance	No			
Post-Disaster Recovery Ordinance	No			
Real Estate Disclosure Requirement	Yes	State	Division of Consumer Affairs	N.J.A.C. 13:45A-29.1
Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	Yes	Local		Steep Slope Ordinance

### Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Township of Chatham.

**Table 9.6-6. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Township Committee
Mitigation Planning Committee	No	
Environmental Board/Commission	Yes	Township Committee
Open Space Board/Committee	Yes	Township Committee
Economic Development Commission/Committee	No	
Maintenance Programs to Reduce Risk	Yes	Dept of Public Works
Mutual Aid Agreements	Yes	Police/Fire Depts./EMS
<b>Technical/Staffing Capability</b>		



Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Yes	Engineer/Town Planner
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Engineer/Construction
Planners or engineers with an understanding of natural hazards	Yes	Engineer
NFIP Floodplain Administrator	Yes	Township Engineer
Surveyor(s)	No	
Personnel skilled or trained in GIS and/or Hazus-MH applications	Yes	Town Administrator/Engineer
Scientist familiar with natural hazards	No	
Emergency Manager	Yes	OEM
Grant Writer(s)	No	
Staff with expertise or training in benefit/cost analysis	Yes	Town Administrator
Professionals trained in conducting damage assessments	Yes	Engineer

### Fiscal Capability

The table below summarizes financial resources available to the Township of Chatham.

**Table 9.6-7. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)
Community development Block Grants (CDBG, CDBG-DR)	DK
Capital Improvements Project Funding	YES
Authority to Levy Taxes for specific purposes	YES
User fees for water, sewer, gas or electric service	YES
Impact Fees for homebuyers or developers of new development/homes	NO
Stormwater Utility Fee	NO
Incur debt through general obligation bonds	YES
Incur debt through special tax bonds	YES
Incur debt through private activity bonds	DK
Withhold public expenditures in hazard-prone areas	DK
Other Federal or State Funding Programs	YES
Open Space Acquisition Funding Programs	YES – Morris County Flood Mitigation Program (acquisitions)
Other	

### Community Classifications

The table below summarizes classifications for community program available to the Township of Chatham.



Table 9.6-8. Community Classifications

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	NO		
Building Code Effectiveness Grading Schedule (BCEGS)	NO		
Public Protection (ISO Fire Protection Classes 1 to 10)	NO		
Storm Ready	NO		
Firewise	NO		
Disaster/Safety Programs in/for Schools	YES		
Organizations with Mitigation Focus (advocacy group, non-government)	NO		
Public Education Program/Outreach (through website, social media)	YES	Communications Protocol	4/2014
Public-Private Partnerships	NO		

N/A = Not applicable. NP = Not participating. - = Unavailable. TBD = To be determined.

The classifications listed above relate to the community's ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community's capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule
- The ISO Mitigation online ISO's Public Protection website at <http://www.isomitigation.com/ppc/0000/ppc0001.html>
- The National Weather Service Storm Ready website at <http://www.weather.gov/stormready/howto.htm>
- The National Firewise Communities website at <http://firewise.org/>

### Self-Assessment of Capability

The table below provides an approximate measure of Chatham's capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.





Table 9.6-9. Self-Assessment Capability for the Municipality

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Planning and Regulatory Capability			HIGH
Administrative and Technical Capability			HIGH
Fiscal Capability			HIGH
Community Political Capability			HIGH
Community Resiliency Capability		Moderate	
Capability to Integrate Mitigation into Municipal Processes and Activities.			HIGH

### National Flood Insurance Program

Chatham Township takes part in the NFIP.

### NFIP Floodplain Administrator

John Ruschkefeels

### Flood Vulnerability Summary

Chatham Township joined the NFIP on July 27, 1973, and is currently an active member of the NFIP. The current effective Flood Insurance Rate Maps are dated July 19, 2001. The community's Flood Damage Prevention Ordinance (FDPO), found at Section 30-113 of the local code, was last updated in 2001.

As of February 28, 2015, there are 51 policies in force. Since September 30, 2014, 13 claims have been paid totaling \$104,523.09. As of 2015 there are 1 Repetitive Loss and 0 Severe Repetitive Loss properties in the community.

The Township does not currently maintain a list of flood damaged properties nor a property owner's interest in mitigation projects. No Substantial Damage Estimates were made following Hurricane Sandy. At this time, no property owners in the Township are interested in mitigation projects.

### Resources

The community FDPO identifies the Municipal Engineer as the local NFIP Floodplain Administrator, currently John K. Ruschke, PE, CFM, for which floodplain administration is an auxiliary duty. Duties and responsibilities of the NFIP Administrator are permit review, inspections, damage assessments, and record keeping.

John Ruschkefeels he is adequately supported and trained to fulfill his responsibilities as the municipal floodplain administrator. No financial, political, or personnel barriers were identified to inhibit the Township's ability to implement an effective floodplain program. John Ruschke is certified in floodplain management and attends regular continuing education programs for code enforcement.

### Compliance History

The community is currently in good standing in the NFIP and has no outstanding compliance issues. The current NFIP Floodplain Administrator has no knowledge of when the last CAV was performed. John Ruschke sees no specific need for a CAV at this time.





### **Regulatory**

The communities Flood Damage Prevention Ordinance (FDPO) was last updated in 2001, and is found at Section 30-113 of the local code. Current ordinances and regulations enforced exceed the minimum requirements set forth by FEMA and the State of New Jersey.

### **Community Rating System**

The Township of Chatham does not participate in the Community Rating System (CRS) program.

### **Integration of Hazard Mitigation into Existing and Future Planning Mechanisms**

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures.

### **Planning**

The Township recently adopted a Master Plan in 2011. The 2011 Master Plan identified the following recommendations and considerations related to natural hazard mitigation:

1. Current floodplain standards, which permit buildings in delineated flood hazard areas (areas that flood regularly) and allow increased flood depths resulting from such construction.
2. no development occurs on the most sensitive steep slope areas, especially the highly erodible soils in the southern portion of the Township, where downslope impacts are very difficult to control
3. The Township should also consider overlay zoning that would provide tract area adjustments to account for natural resource restrictions, including floodplains, erodible soils, steep slopes and wetlands

The Township also has a Stormwater Management Plan that was completed in 2005 that includes the following goals and implementation schedule:

1. Reduce flood damage, including damage to life and property;
2. Assure the adequacy of existing and proposed culverts and bridges, and other in-stream structures;
3. Protect public safety through proper design and operation of stormwater basins

### **Regulatory and Enforcement**

The Township's Land Use Ordinance, Section 30-113 Floodplain Regulations consider flood hazard risks. The Borough Planning Board uses the advice of Borough professionals and the Emergency Management Coordinator to guide their decisions with respect to natural hazard risk management. The Planning Board requires developers to take additional actions to mitigate flood hazard risk. The zoning code includes Section 30-96.20 that includes considerations for steep slopes.

### **Operational and Administration**

The Township has a planning and engineering consultant. The Township has a Planning Board in accordance with its statutory authority. The Board reviews all site plans, subdivision, and variance applications in



accordance with the adopted codes in the Chatham Township and pursuant to its jurisdiction under the Municipal Land Use Law (N.J.S.A. 40:55D-1 et seq.). Hatch Mott and McDonald, the Township's consultant performs both Stormwater Management functions and NFIP Floodplain Management functions within the Township.

### Fiscal

Currently, the municipal/operating budget does not include line items for mitigation projects or activities. The Township does have a Capital Improvements Budget which includes budget for mitigation-related projects. The Township has planned for the following as part of the capital budget:

- Various road improvements.
- Purchase of Police Department equipment related to accreditation program.
- Purchase of fire equipment to support volunteers.
- Various building improvements including repairs to the Municipal Building HVAC and Fire Alarm System
- Purchase of DPW equipment

### Education and Outreach

The township has an Emergency Management website that as a wealth of applicable information including:

- OEM Staff Information
- Alert Information
- Sheltering Information
- Emergency Status Map
- Information Pages about what citizens can do during an emergency or disaster event
- Information on the Community Emergency Response Team

## 9.6.6 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritization.

### Past Mitigation Initiative Status

The following table indicates progress on the community's mitigation strategy identified in the 2010 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under 'Capability Assessment' presented previously in this annex.

**Table 9.6-10. Past Mitigation Initiative Status**

Description	Status	Review Comments
Chatham Twp 1: Backup power (generator) for Municipal Building.	In Progress	Include in 2015 HMP
Chatham Twp 2: Building code update.	No Progress	Discontinue
Chatham Twp 3: Hardening/retrofitting and burying utility lines for Fairmount Avenue.	No Progress	Discontinue



Description	Status	Review Comments
Chatham Twp 4: Hardening/retrofitting and burying utility lines for Southern Boulevard.	No Progress	Discontinue
Chatham Twp 5: Develop all-hazards public education and outreach program for hazard mitigation and preparedness.	No Progress	Include in 2015 HMP

### Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy

The municipality did not identify any mitigation projects/activities that have been completed but were not identified previously.

### Proposed Hazard Mitigation Initiatives for the Plan Update

The Township of Chatham participated in a mitigation action workshop in January 2015 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.6-11 summarizes the comprehensive-range of specific mitigation initiatives the Township of Chatham would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6, fourteen evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing your actions as ‘High’, ‘Medium’, or ‘Low.’ The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.6-12 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.6-11. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
Chatham Twp - 1	Backup power (generator) for Municipal Building.	Existing	Flooding, Severe Storm, Severe Winter Storm	G-2, G-4	Twp. Engineer	Avoid Loss of Function	unknown	unknown	In progress. Will work to secure funding; possibly 2015.	High	SIP	PR
Chatham Twp - 2	Develop all-hazards public education and outreach program for hazard mitigation and preparedness	Existing	All	G-1, G-3	Twp OEM, Comm Mgr.	Improve education, outreach and Emergency Contact Info	unknown	unknown	In progress. Will work to secure funding; possibly 2015.	Medium	EAP	PI/ NR
Chatham Twp - 3	Tree Removal & Maintenance	Existing	Severe Storm, Severe Winter Storm	G-2, G-4	Twp. DPW,	Loss of Function, Road Closures & Detours	\$30,000	Chatham Twp.	Short Term and Continuous in the Future	High	NSP	PI/ NR
Chatham Twp - 4	Treatment Plant Maintenance & Upgrades for Large Storm Events	Existing	Flooding, Severe Storm, Severe Winter Storm	G-2, G-4	Twp. Engineer	Loss of Function	unknown	unknown	Short term	High	NSP/ EAP	PI/ NR
Chatham Twp - 5	Catch Basin & General Storm Water Facility Maintenance	Existing	Flooding, Severe Storm, Severe Winter Storm	G-2, G-4	Twp. DPW, Twp. Engineer	Avoid Loss of Function	\$15,000	Chatham Twp.	Short Term and Continuous in the Future	High	SIP	SP
Chatham Twp - 6	Revamped and improved OEM Web page	Existing	All	G-1, G-3	Twp OEM, Comm Mgr.	Improve education, outreach and Emergency Contact Info	\$2,000	Chatham Twp	In Progress	High	EAP	PI

*Notes:*

Not all acronyms and abbreviations defined below are included in the table.

\*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.

Acronyms and Abbreviations:

CAV Community Assistance Visit  
CRS Community Rating System

Potential FEMA HMA Funding Sources:

FMA Flood Mitigation Assistance Grant Program  
HMGP Hazard Mitigation Grant Program

Timeline:

Short 1 to 5 years  
Long Term 5 years or greater





Acronyms and Abbreviations:

DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
NJDEP	New Jersey Department of Environmental Protection
NJOEM	New Jersey Office of Emergency Management
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

PDM	Pre-Disaster Mitigation Grant Program
RFC	Repetitive Flood Claims Grant Program (discontinued 2015)
SRL	Severe Repetitive Loss Grant Program (discontinued 2015)

Timeline:

OG	On-going program
DOF	Depending on funding

Costs:

Where actual project costs have been reasonably estimated:

Low	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where actual project costs cannot reasonably be established at this time:

Low	Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.
Medium	Could budget for under existing work plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
High	Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

Benefits:

Where possible, an estimate of project benefits (per FEMA’s benefit calculation methodology) has been evaluated against the project costs, and is presented as:

Low=	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where numerical project benefits cannot reasonably be established at this time:

Low	Long-term benefits of the project are difficult to quantify in the short term.
Medium	Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
High	Project will have an immediate impact on the reduction of risk exposure to life and property.

Mitigation Category:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP)- These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

CRS Category:

- Preventative Measures (PR) - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- Property Protection (PP) - These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- Public Information (PI) - Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.



- *Natural Resource Protection (NR) - Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.*
- *Structural Flood Control Projects (SP) - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.*
- *Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities*



Table 9.6-12. Summary of Prioritization of Actions

Mitigation Action / Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
Chatham Twp - 1	Backup power (generator) for Municipal Building.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	High
Chatham Twp - 2	Develop all-hazards public education and outreach program for hazard mitigation and preparedness	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Medium
Chatham Twp - 3	Tree Removal & Maintenance	1	1	1	1	1	1	-1	1	0	-1	1	1	1	1	9	high
Chatham Twp - 4	Treatment Plant Maintenance & Upgrades for Large Storm Events	1	1	1	1	1	1	-1	1	0	-1	1	1	1	1	9	high
Chatham Twp - 5	Catch Basin & General Storm Water Facility Maintenance	1	1	1	1	1	1	-1	1	0	-1	1	1	1	1	9	high
Chatham Twp - 6	Revamped and improved OEM Web page	1	1	1	1	1	1	1	0	0	1	0	1	1	1	11	high

Note: Refer to Section 6 which contains the guidance on conducting the prioritization of mitigation actions.





### **9.6.7 Future Needs To Better Understand Risk/Vulnerability**

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None at this time.

### **9.6.8 Hazard Area Extent and Location**

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Hazard area extent and location maps have been generated for the Township of Chatham that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Township of Chatham has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

### **9.6.9 Additional Comments**

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None at this time.



Figure 9.6-1. Township of Chatham Hazard Area Extent and Location Map 1

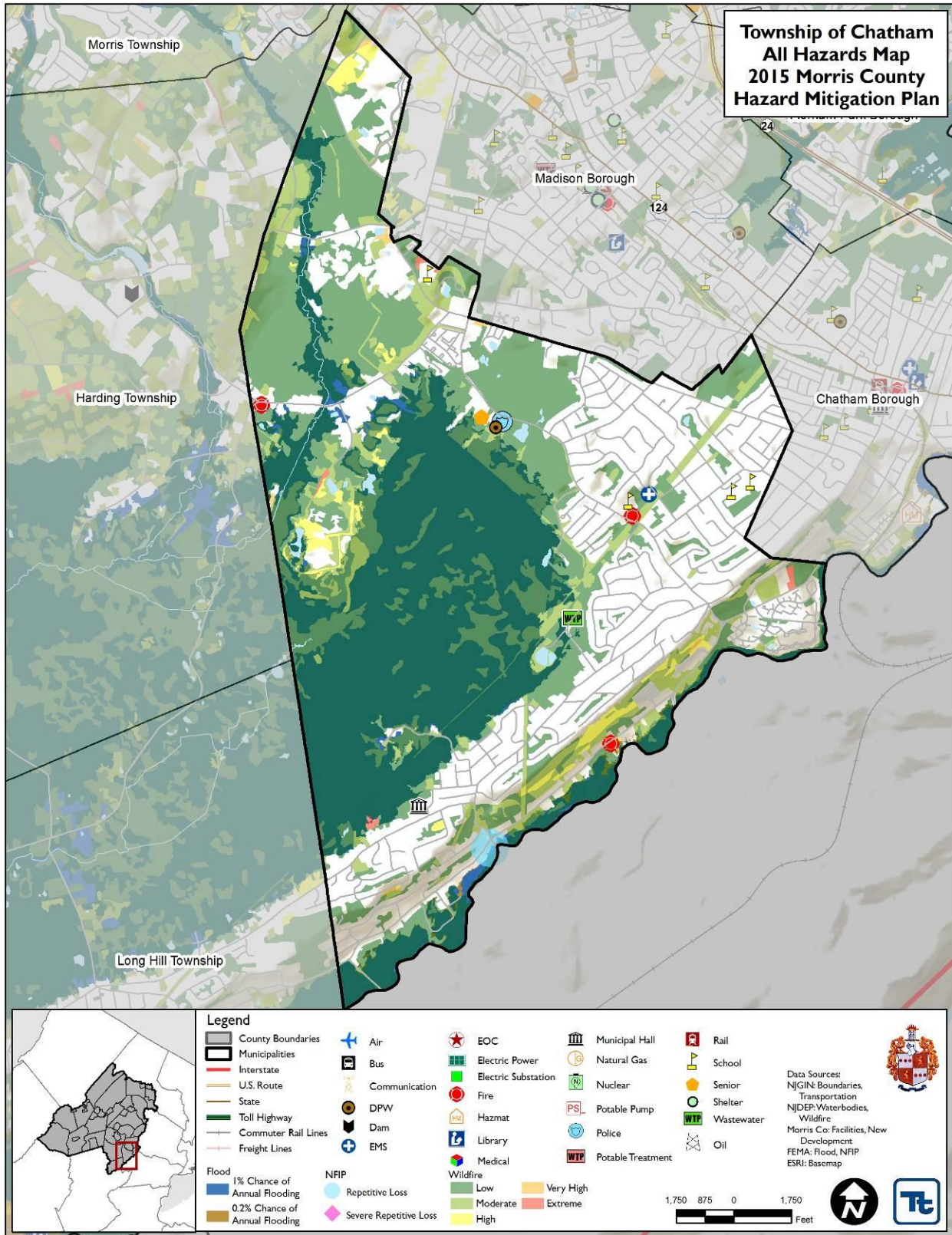
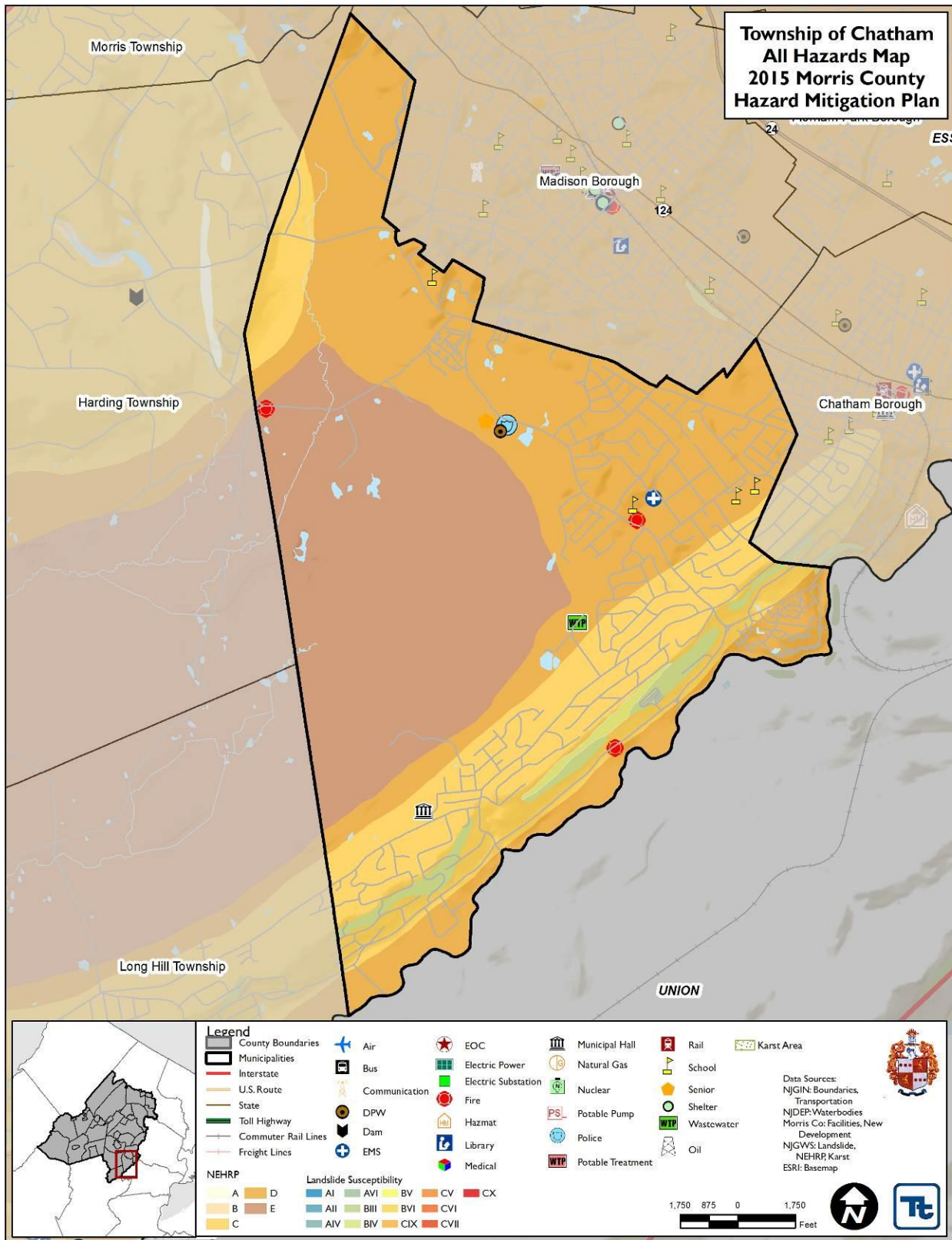






Figure 9.6-2. Township of Chatham Hazard Area Extent and Location Map 2





Name of Jurisdiction: Chatham Township  
Action Number: Chatham Twp - 1  
Mitigation Action/Initiative: Backup power (generator) for Municipal Building

Assessing the Risk	
Hazard(s) addressed:	Flooding, Severe Storms, Severe Winter Storms
Specific problem being mitigated:	Maintain power at our Municipal Building allowing for continuous operations as well as our Senior Citizen Center and to act as a comfort station.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Purchase and install generator at municipal building
	2. Purchase portable generators to use during power outages
	3. Do nothing – current problem continues
Action/Project Intended for Implementation	
Description of Selected Action/Project	Providing continuous generator backup power to our municipal building.
Action/Project Category	SIP
Goals/Objectives Met	G-2, G-4
Applies to existing, future, or not applicable	Existing
Benefits (losses avoided)	Will reduce/eliminate loss of function and allow for continuous operations of our municipal staff.
Estimated Cost	Medium
Priority*	High
Plan for Implementation	
Responsible Organization	Chatham Township Committee
Local Planning Mechanism	Township Administrator/Engineer
Potential Funding Sources	NJOEM/FEMA Grant funding with local cost share
Timeline for Completion	Short Term
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: 6/30/15 Progress on Action/Project: Complete

\* Refer to results of Prioritization (page 2)

**Action Number:**

Chatham Twp - 1

**Mitigation Action/Initiative:**

Backup power (generator) for Municipal Building

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Allow for appropriate emergency response by municipal staff and provide a comfort station for municipal residents affected by a prolonged loss of power.
Property Protection	1	Providing backup power to communicate as well as provide emergency operation capabilities.
Cost-Effectiveness	1	Extremely cost effective, relative to the potential losses without it.
Technical	1	Technically feasible and provide a long term benefit.
Political	1	Supported unanimously
Legal	0	n/a
Fiscal	1	Funded
Environmental	0	n/a
Social	1	n/a
Administrative	1	Administratively can be handled
Multi-Hazard	1	Yes
Timeline	1	Can be accomplished quickly
Agency Champion	1	Yes
Other Community Objectives	1	Enhances community emergency operations efforts
<b>Total</b>	12	
<b>Priority (High/Med/Low)</b>	High	



**Name of Jurisdiction:** Chatham Township  
**Action Number:** Chatham Twp - 3  
**Mitigation Action/Initiative:** Tree Removal and Maintenance

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Severe Storms, Severe Winter Storms
<b>Specific problem being mitigated:</b>	Loss of function, road closures and detours.
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Management of trees and tree limbs in the Township
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Continuous management of trees and tree limbs that pose a danger to our network of roads and critical facilities.
<b>Action/Project Category</b>	NSP
<b>Goals/Objectives Met</b>	G-2, G-4
<b>Applies to existing, future, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	Mitigates the potential loss of life, property damage, and the effective functioning of our first responders through limiting road closures.
<b>Estimated Cost</b>	Medium
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Chatham Township Administrator/Department of Public Works Director
<b>Local Planning Mechanism</b>	DPW Director
<b>Potential Funding Sources</b>	Grant funding with local cost share
<b>Timeline for Completion</b>	Short Term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: 6/30/15 Progress on Action/Project: On-Going and into the future.



**Name of Jurisdiction:** Chatham Township  
**Action Number:** Chatham Twp - 3  
**Mitigation Action/Initiative:** Tree Removal and Maintenance

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Will protect lives or prevent injuries by taking this preventive action.
Property Protection	1	Will help prevent or minimize property damage.
Cost-Effectiveness	1	Cost effective relative to the damage and disruptions it may cost without doing
Technical	1	Technically feasible and provide a long-term benefit.
Political	1	Supported unanimously
Legal	0	n/a
Fiscal	1	Funded locally, enhanced effort with grants
Environmental	0	n/a
Social	0	n/a
Administrative	1	Administratively can be handled
Multi-Hazard	1	Yes
Timeline	1	Can be accomplished quickly, but is continuous
Agency Champion	1	Yes
Other Community Objectives	1	Enhances community emergency operations efforts
<b>Total</b>	11	
<b>Priority (High/Med/Low)</b>	High	





**Name of Jurisdiction:** Chatham Township  
**Action Number:** Chatham Twp - 4  
**Mitigation Action/Initiative:** Treatment Plant Maintenance and Upgrades for Large Storm Events

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flooding, Severe Storms, Severe Winter Storms
<b>Specific problem being mitigated:</b>	Loss of function
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Upgrade sewer treatment plant
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Sewer Treatment Plant Upgrades
<b>Action/Project Category</b>	NSP/EAP
<b>Goals/Objectives Met</b>	G-2, G-4
<b>Applies to existing, future, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	Improve and fortify existing Plant to limit/avoid loss of function.
<b>Estimated Cost</b>	High
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Chatham Township Committee
<b>Local Planning Mechanism</b>	Township Engineer
<b>Potential Funding Sources</b>	Grant funding with local cost share
<b>Timeline for Completion</b>	Short Term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: 6/30/15 Progress on Action/Project: Continuing



Action Number:

Chatham Twp - 4

Mitigation Action/Initiative:

Treatment Plant Maintenance and Upgrades for Large Storm Events

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	n/a
Property Protection	1	Will help prevent or minimize property damage.
Cost-Effectiveness	1	Cost effective relative to the damage and disruptions it may cost without doing
Technical	1	Technically feasible and provide a long-term benefit.
Political	1	Supported
Legal	0	n/a
Fiscal	1	Funded locally, enhanced effort with grants
Environmental	0	n/a
Social	0	n/a
Administrative	1	Administratively can be handled
Multi-Hazard	1	Yes
Timeline	1	Can be accomplished short term, over the next 5 years
Agency Champion	1	Yes
Other Community Objectives	1	Capital improvement
Total	10	
Priority (High/Med/Low)	High	



**Name of Jurisdiction:** Chatham Township  
**Action Number:** Chatham Twp - 5  
**Mitigation Action/Initiative:** Catch Basin & General Storm Water Facility Maintenance

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flooding, Severe Storms, Severe Winter Storms
<b>Specific problem being mitigated:</b>	Loss of function
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Improve, replace and repair existing catch basins
	2. Do nothing – current problem continues
	3. No other feasible options were identified for this project
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	Improve, replace and repair existing catch basins and storm water facilities.
<b>Action/Project Category</b>	SIP
<b>Goals/Objectives Met</b>	G-2, G-4
<b>Applies to existing, future, or not applicable</b>	Existing
<b>Benefits (losses avoided)</b>	Reduce potential flooding and improve environmentally sensitive areas to surrounding storm water run-off.
<b>Estimated Cost</b>	Medium
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Chatham Township Committee
<b>Local Planning Mechanism</b>	Township Engineer/Department of Public Works
<b>Potential Funding Sources</b>	Grant funding with local cost share
<b>Timeline for Completion</b>	Short Term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: 6/30/15 Progress on Action/Project: Continuing



Action Number:

Chatham Twp - 5

Mitigation Action/Initiative:

Catch Basin & General Storm Water Facility Maintenance

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	n/a
Property Protection	1	Will help prevent or minimize property damage.
Cost-Effectiveness	1	Cost effective relative to the damage and disruptions it may cost without doing
Technical	1	Technically feasible and provide a long-term benefit.
Political	1	Supported
Legal	0	n/a
Fiscal	1	Funded locally, enhanced effort with grants
Environmental	1	Will comply with all Federal, State and local requirements
Social	0	n/a
Administrative	1	Administratively can be handled
Multi-Hazard	1	Yes
Timeline	1	Can be accomplished short term and continuous into the future
Agency Champion	1	Yes
Other Community Objectives	1	Capital improvement, environmental quality improvements
Total	11	
Priority (High/Med/Low)	High	